

In the claims

Claims 1-19 (canceled)

20. (currently amended): A process to produce a purified carboxylic acid

productcomposition comprising:

- (a) removing in a solid-liquid displacement zone impurities from a crude carboxylic acid slurry composition to form a slurry productcomposition; wherein said crude carboxylic acid slurry composition comprises at least one carboxylic acid terephthalic acid, catalyst, acetic acid, and impurities that is withdrawn at a temperature between about 140°C and about 170°C from the oxidation of paraxylene in a primary oxidation zone; wherein there is less than 5 percent by weight a substantial absence of terephthalic acid and isophthalic acid in said crude carboxylic acid slurry composition; and wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone;
- (b) oxidizing said slurry productcomposition in a staged oxidation zone to form a staged oxidation productcomposition; wherein said oxidizing is conducted at a temperature between about 190°C to about 280°C; and ~~wherein said oxidizing is at a higher temperature in said staged oxidation zone than in said primary oxidation zone;~~
- (c) crystallizing said staged oxidation productcomposition in a crystallization zone to form a crystallized productcomposition;
- (d) cooling said crystallized productcomposition in a cooling zone to form a cooled purified carboxylic acid slurry composition; and

(e) filtering and optionally drying said cooled purified carboxylic acid slurry composition in a filtration and drying zone ~~to remove a portion of the solvent from~~ said cooled carboxylic acid slurry to produce said purified carboxylic acid product composition.

21. (currently amended): A process to produce a purified carboxylic acid product composition comprising:

(a) oxidizing an aromatic feed stock in a primary oxidation zone to form a crude carboxylic acid slurry composition; wherein said crude carboxylic acid slurry composition comprises at least one carboxylic terephthalic acid; wherein said oxidizing is conducted at a temperature between about 120°C to about 200°C; and wherein there is less than 5% by weight a substantial absence of terephthalic acid and isophthalic acid in said crude carboxylic acid slurry composition;

(b) removing in a solid-liquid displacement zone impurities from said a crude carboxylic acid slurry composition to form a slurry composition product; wherein ~~said crude carboxylic acid slurry comprises terephthalic acid, catalyst, acetic acid, and impurities that is withdrawn at a temperature between about 140°C and about 170°C from the oxidation of paraxylene in a primary oxidation zone; and~~ wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone;

(c) oxidizing said slurry product composition in a staged oxidation zone to form a staged oxidation product composition; wherein said oxidizing is conducted at a temperature between about 190°C to about 280°C; ~~and wherein said oxidizing is~~

~~at a higher temperature in said staged oxidation zone than in said primary oxidation zone;~~

(d) crystallizing said staged oxidation ~~product~~composition in a crystallization zone to form a crystallized ~~product~~composition;

(e) cooling said crystallized ~~product~~composition in a cooling zone to form a cooled purified carboxylic acid slurrycomposition; and

(f) filtering and optionally drying said cooled purified carboxylic slurry composition in a filtration and drying zone ~~to remove a portion of the solvent from said cooled carboxylic acid slurry~~ to produce said purified carboxylic acid ~~product~~composition.

22. (currently amended): The process according to claim 20 or 21 further comprising decolorizing in a reactor zone said purified carboxylic acid slurry composition or a carboxylic acid that has been esterified.
23. (currently amended): The process according to claim 22 wherein said decolorizing is accomplished by reacting said crude carboxylic acid slurry composition ~~solution~~ with hydrogen in the presence of a hydrogenation catalyst in ~~said~~ a reactor zone to produce a decolorized carboxylic acid composition~~solution~~.
24. (original): The process according to claim 20 or 21 wherein said solid-liquid displacement zone comprises a solid-liquid separator that is operated at a temperature between about 50°C to about 200°C.
25. (currently amended): The process according to claim 20 or 21 wherein said purified carboxylic acid slurry ~~product~~composition has a b^* of less than about 4.5.

26. (currently amended): The process according to claim 21 wherein said oxidizing in said primary oxidation zone is conducted in the presence of a catalyst that comprises cobalt, manganese and bromine compounds.
27. (currently amended): The process according to claim 26 wherein the cobalt and manganese combined is present in concentrations of about 1050 ppm to about 2700 ppm by weight in the crude carboxylic acid slurry composition and the bromine can be in concentrations of about 1000 ppm to about 2500 ppm by weight in the crude carboxylic acid slurry composition.
28. (canceled)
29. (canceled)
30. (canceled)
31. (canceled)
32. (new): A process to produce a purified carboxylic acid composition comprising:
- (a) oxidizing an aromatic feed stock in a primary oxidation zone to form a crude carboxylic acid slurry composition; wherein said crude carboxylic acid slurry composition comprises at least one carboxylic acid; wherein said oxidizing is conducted at a temperature between about 120°C to about 200°C; and wherein there is less than 5% by weight terephthalic acid and isophthalic acid in said crude carboxylic acid slurry composition;
 - (b) removing in a solid-liquid displacement zone impurities from said crude carboxylic acid slurry composition to form a slurry composition; and wherein said

impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone;

- (c) oxidizing said slurry composition in a staged oxidation zone to form a staged oxidation composition; wherein said oxidizing is conducted at a temperature between about 190°C to about 280°C;
 - (d) crystallizing said staged oxidation composition in a crystallization zone to form a crystallized composition;
 - (e) cooling said crystallized composition in a cooling zone to form a cooled purified carboxylic acid slurry composition; and
 - (f) filtering and optionally drying said cooled purified carboxylic acid slurry in a filtration and drying zone to produce said purified carboxylic acid composition.
33. (new): The process according to claim 32 further comprising decolorizing in a reactor zone said purified carboxylic acid slurry composition or a carboxylic acid that has been esterified.
34. (new): The process according to claim 33 wherein said decolorizing is accomplished by reacting said crude carboxylic acid slurry composition with hydrogen in the presence of a hydrogenation catalyst in said reactor zone to produce a decolorized carboxylic acid composition.
35. (new): The process according to claim 32 wherein said solid-liquid displacement zone comprises a solid-liquid separator that is operated at a temperature between about 50°C to about 200°C.
36. (new): The process according to claim 32 wherein said purified carboxylic acid slurry composition has a b^* of less than about 4.5.

Docket: 80040 US01

37. (new) The process according to claim 32 wherein said oxidizing in said primary oxidation zone is conducted in the presence of a catalyst that comprises cobalt, manganese and bromine compounds.
38. (new) The process according to claim 37 wherein the cobalt and manganese combined is present in concentrations of about 1050 ppm to about 2700 ppm by weight in the crude carboxylic acid slurry composition and the bromine can be in concentrations of about 1000 ppm to about 2500 ppm by weight in the crude carboxylic acid slurry composition.